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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/505,192	02/16/2000	Yoshiharu Hashimoto	Q57919	6549

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MACPEAK & SEAS
2100 Pennsylvania Avenue NW
Washington, DC 20037-3203

EXAMINER

NGUYEN, KEVIN M

ART UNIT

PAPER NUMBER

2674

DATE MAILED: 01/03/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/505,192

Applicant(s)

HASHIMOTO, YOSHIHARU

Examiner

Kevin M. Nguyen

Art Unit

2674

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 6-8 is/are pending in the application.
- 4a) Of the above claim(s) 5 and 9-13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6-8 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. Applicant's election without traverse of Species I, a claim 1-4 and 6-8 in Paper No. 09/505192 is acknowledged. Claims 5 and 9-13 are withdraw from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Drawings

2. The drawings are objected to because resistor M1, resistor M2 (figure 6). At page 14, line 26 the specification describes the transistor M1 and M2. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to under 37 CFR 1.83(a) because they fail to show an analog switch as described in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claim 1 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This claim claims voltage adjusting means for inducing a voltage rise or a voltage drop of the voltage outputted from said operational amplifier based on low bits of said digital image data excluding said high order bits. At page 17, lines 12-15 the specification describes a steady state current I_{m1} flows through the transistor M1 and, since the supply voltage VDD is supplied to a source of the transistor M1, a voltage rise of $\Delta V = I_{m1} \times R_m$ occurs at the resistor 12. Which the operational amplifier 11 or resistor 12 adjust a voltage rise or a voltage drop. How the op-amp 11 induce the voltage. The broadly describe voltage adjusting means for inducing a voltage rise or a voltage drop do not support the claimed invention.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claim 1 (lines 16-19) is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are: a resistor 12, a transistor M1, a transistor M2, a LSB control circuit 13, an output offset control circuit 14.

8. Regarding claim 1, the phrase "an operational amplifier used to convert an impedance of a voltage outputted from said gray shade voltage selecting means" renders the claim indefinite because it is unclear. At page 14, lines 17-19, the

specification describes an operational amplifier 11 used to amplify an output signal fed from the gray shade voltage selecting circuit. How the operational amplifier 11 convert impedance. Correction is required.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1-4 and 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art hereinafter AAPA in view of Yanagi et al (US 5,929,847).

11. As to claim 1, AAPA discloses the conventional driving circuit having data 6 bits, a gray shade voltage generating circuit 56 which is used to divide gray shade voltage including 9 voltage values from V0 to V8, a gray shade voltage selecting circuit 54, an operational amplifier 55 (see page 2, lines 4-19). Therefore, AAPA discloses all of the claimed limitations of claim 1, except for "voltage adjusting means for inducing a voltage rise or a voltage drop of the voltage outputted from said operational amplifier based on low bits of said digital image data excluding said high order bits." However, Yanagi teaches, referring to Fig. 17, the voltage generating circuit having the control signals Sac and Sdc (the digital image data), the operational amplifier (op-amp) OPa, a resistor R3 connected at node Vy and source of transistor SW1, a signal POL (low order bit), the output voltage $V_y = V_{dc} + V_{ac}$ (a voltage rise) (see col. 30, lines 55-67). It would

have been obvious to a person of ordinary skill in the art at the time of the invention to include the additional voltage generating circuit taught by Yanagi in the driving circuit of AAPA because it is noted that the present invention can be applied to the conventional driver circuit for a display panel (see col. 40, lines 44-45 of Yanagi).

12. As to claim 2, Yanagi teaches, referring to Fig. 17, the voltage generating circuit having the operational amplifier (op-amp) OPa, a resistor R3 connected at node Vy and source of transistor SW1, a signal POL (low order bit), a level conversion circuit 2 (control means) (see col. 30, lines 55-67).

13. As to claim 3, Yanagi teaches, referring to Fig. 17, two transistors SW1 and SW2 connecting to a resistor R3 and a level conversion circuit 2, the level conversion circuit 2 converting the signal POL (low order bit).

14. As to claim 4, Yanagi teaches, referring to Fig. 17, the resistor R3 including the capacitor Cy (an analog switch).

15. As to claim 6, AAPA discloses the gray shade voltage of 9 values inputted from outside are divided to generate the gray shade voltage of 64 values such as a voltage divider method or resistance string method (see page 2, lines 20-23).

16. As to claim 7, Yanagi teaches, referring to Fig. 19, the amplitude can be adjusted with the control voltage Vac and the center of the amplitude can be adjusted with the control voltage Vdc (see col. 31, lines 1-11).

17. As to claim 8, Yanagi teaches the control signal Sac and Sdc (high order bit) and the signal POL (low order bit).

Conclusion

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO-892 form.

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Kevin M. Nguyen** whose telephone number is **703-305-6209**. The examiner can normally be reached on MON-FRI from 9:00-5:00 with alternate Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Richard A Hjerpe** can be reached on **703-305-4709**.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered response should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

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Kevin M. Nguyen
Examiner
Art Unit 2674



RICHARD HJERPE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600